

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the present application.

LISTING OF THE CLAIMS:

1. (Previously Presented) A pump device, comprising:

a metal housing;

at least one eccentric shaft; and

at least one of: i) a piston and ii) sealing elements to seal the pump piston, the at least one of the pump piston and sealing elements having a coating containing at least one of i) halogen-, ii) silicon-, iii) carbon-containing, and iv) metal-organic monomers;

wherein the coating includes:

an inner adhesive layer including one of a) chromium, and b) silicon;

at least one intermediate layer including one of a) chromium, b) tungsten, c) silicon, and d) carbon; and

one of a) an outer, metal-free functional layer of diamond-like carbon (DLC), and b) an outer, metal-containing functional layer including tungsten carbide,

wherein one of the piston and the sealing elements is made of metal, and another of the piston and the sealing elements is made of an elastomeric material,

wherein the rotational motion of a drive is transmitted via the at least one shaft to the at least one piston,

wherein a section of the metal housing abuts the at least one piston next to the at least one shaft and guide the movement of the at least one piston, and

wherein a layer thickness of the three layers together is approximately 0.5 micrometers to 4 micrometers at a micro-hardness of approximately 4 to 40 GPa.

2. (Previously Presented) The device as recited in claim 1, wherein the outer functional layer of the coating is made up of diamond-like carbon.

3-20. (Canceled).

21. (Previously Presented) The device as recited in claim 1, wherein the piston is made of metal.
22. (Previously Presented) The device as recited in claim 1, wherein the sealing elements are made of the elastomeric material.
23. (Currently Amended) The device as recited in claim 1, wherein the elastomeric material includes one of EPDM, Viton™, Turcan™, ~~viton, turean~~, and rubber variants of EPDM.
24. (Previously Presented) The device as recited in claim 1, wherein the coating provides the sealing elements with a higher abrasion resistance and hardness, and a lower coefficient of friction.
25. (Previously Presented) The device as recited in claim 1, wherein the piston is made of metal, and wherein the sealing elements are made of the elastomeric material.
26. (Previously Presented) The device as recited in claim 25, wherein the coating is on the piston.
27. (Previously Presented) The device as recited in claim 25, wherein the coating is on the sealing elements.
28. (Previously Presented) The device as recited in claim 25, wherein the coating is on the piston and on the sealing elements.
29. (Previously Presented) The device as recited in claim 1, wherein the coating is on the piston.
30. (Previously Presented) The device as recited in claim 1, wherein the coating is on the sealing elements.
31. (Previously Presented) The device as recited in claim 1, wherein the coating is on the piston and on the sealing elements.

32. (Previously Presented) The device as recited in claim 1, wherein the elastomeric material includes EPDM, which includes terpolymers of ethylene, propylene and a diene having an unsaturated part of the diene in a side chain.

33. (Previously Presented) The device as recited in claim 1, wherein the sealing elements include sealing rings.

34. (Previously Presented) The device as recited in claim 1, wherein the sealing elements include a quad-ring.

35. (Previously Presented) The device as recited in claim 1, wherein the sealing elements include a quad-ring, which includes concavely shaped surfaces and four annularly integrated sealing lips.

36-40. (Canceled).

41. (Previously Presented) The device as recited in claim 1, wherein a coefficient of friction of the functional layer amounts to approximately 0.05 to 0.3.

42. (Currently Amended) The device as recited in claim 1, wherein the outer functional layer of the coating is made up of diamond-like carbon, wherein the piston is made of metal, wherein the sealing elements are made of the elastomeric material, wherein the elastomeric material includes one of EPDM, Viton™, Turcan™ ~~viton, tureun~~, and rubber variants of EPDM, wherein the coating provides the sealing elements with a higher abrasion resistance and hardness, and a lower coefficient of friction, wherein the coating is on at least one of the piston and the sealing elements.

43. (Canceled).

44. (Previously Presented) The device as recited in claim 42, wherein a coefficient of friction of the functional layer amounts to approximately 0.05 to 0.3.

45. (Previously Presented) The device as recited in claim 42, wherein the elastomeric material includes EPDM, which includes terpolymers of ethylene, propylene and a diene having an unsaturated part of the diene in a side chain.

46. (Previously Presented) The device as recited in claim 45, wherein the sealing elements include sealing rings.

47. (Previously Presented) The device as recited in claim 45, wherein the sealing elements include a quad-ring.

48. (Previously Presented) The device as recited in claim 45, wherein the sealing elements include a quad-ring, which includes concavely shaped surfaces and four annularly integrated sealing lips.

49. (Canceled).

50. (Currently Amended) The device as recited in claim 1, wherein the outer functional layer of the coating is made up of diamond-like carbon, wherein the piston is made of metal, wherein the sealing elements are made of the elastomeric material, wherein the elastomeric material includes one of EPDM, Viton™, Turcan™ ~~viton, tureun~~, and rubber variants of EPDM, wherein the coating provides the sealing elements with a higher abrasion resistance and hardness, and a lower coefficient of friction, wherein the coating is on the piston and the sealing elements, wherein the sealing elements include sealing rings, wherein a coefficient of friction of the functional layer amounts to approximately 0.05 to 0.3.

51. (Previously Presented) The device as recited in claim 1, wherein the elastomeric material includes EPDM, which includes terpolymers of ethylene, propylene and a diene having an unsaturated part of the diene in a side chain, and wherein the sealing elements include a quad-ring, which includes concavely shaped surfaces and four annularly integrated sealing lips.

52. (Currently Amended) The device as recited in claim 50, wherein the elastomeric material includes Viton™ ~~viton~~, and wherein the sealing elements include a quad-ring, which includes concavely shaped surfaces and four annularly integrated sealing lips.

53. (Currently Amended) The device as recited in claim 50, wherein the elastomeric material includes one of VitonTM and TurcanTM ~~turcan~~, and wherein the sealing elements include a quad-ring, which includes concavely shaped surfaces and four annularly integrated sealing lips.